

At the time of the second observation on April 20 the sky was rather clearer than at the earlier hour. On April 22 at 8.48 there was still some twilight, and this probably accounts partly for the apparent rise in magnitude. On May 4 the moonlight and haze obliterated the fainter stars in the binocular. D.M.  $46^{\circ}760$ , which was used as a comparison star, is rated at 6·5 in the Durchmusterung, but certainly appeared brighter as judged by other stars near which were visible.

1901 May 9.

*The Green Flash at Sunset.* By J. Franklin-Adams.

A series of notes as to the green flash at sunset suggests that time spent upon careful observation of this phenomenon would be amply repaid ; not much more seems to be known about it than the fact that at a particular moment—when the Sun's image is disappearing below the sea horizon—a flash of brilliant green is in a clear sky visible to the naked eye during a fraction of a second.

With a little optical help—that, for instance, of a Zeiss prismatic field glass—it will be found that the green display continues for nearly three seconds.

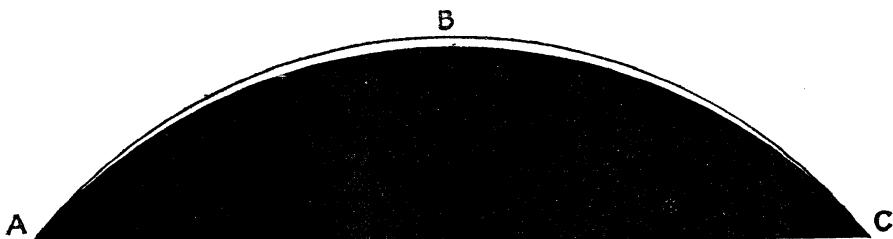


Fig. 1.

The object of this communication is to give some details of an observation made here on April 19 of this year. The Sun set in a manner exceptionally favourable for observing the green flash : sky quite clear, and without any trace of haze or mist even near the horizon.

The green flash first appeared in the shape of a single brilliant emerald bead, then another, and a third, and in about a second a full display of Baily's beads had developed in much the same way as in a solar eclipse, but to a much smaller extent and for a much shorter time. The first bead I noticed was towards the S. point of the horizon, the others close towards the N., until my eye reached the fourth, when I found a string of about seven beads. My idea is that they would form at either end of the segment D E F, fig. 2, and join on the middle of the row, but my

surprise at the sight of Baily's beads without an eclipse was so great that I did not notice this point.

I beg to submit that it would be interesting if careful observers by the seaside—or at sea—during the summer would send any results to the secretaries or to myself. Especially would I ask for sunrise observations of the flash. Astronomers after a night's work seldom sit up until sunrise, but on board ship it is easy to arrange to be called just before sunrise.

It has been suggested to me that if, as has been more or less accepted hitherto, Baily's beads owe their origin to the mountains and valleys in the Moon, the phenomenon here described may have been caused by the waves of the sea taking the place of the mountains of the Moon. The evening was calm, and the waves not large enough to make this possible unless images of the waves were thrown up by a mirage state of the atmosphere. I have twice seen from a steamer's deck mirage images of the sea waves, about a mile distant, thrown up sufficiently to entirely hide the horizon.

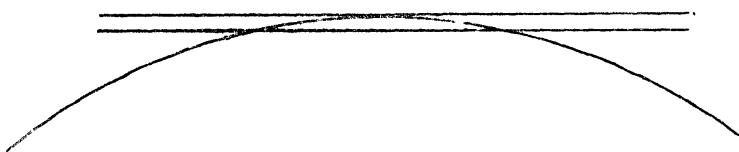


Fig. 2.

I add some further details and some diagrams. Time occupied in fully developing about one and a half seconds, and the same in disappearing. Time was estimated by counting aloud and not by chronograph. Length of bead display in measure of Sun's diameter about one-twelfth—this is very uncertain. Colour of beads emerald green with a slightly bluish tinge. Fig. 1 shows a Moon of 32' eclipsing a Sun of 31'. Fig. 2 shows the extreme diametrical measure of the crescent A B C, fig. 1, being occulted by the straight line of the sea horizon. Fig. 3 shows an estimate of the proportionate size of the beads, drawn for the sake of clearness on a scale about four times that of figs. 1 and 2.

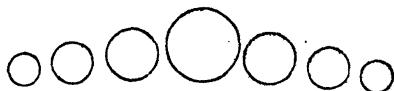


Fig. 3.

Endeavour will be made here during the summer, when our long twilight stops stellar photography, to photograph some flashes through colour screens or filters and to take chronographic measurements of their duration.

*Machrihanish, Argyllshire : 1901 April.*

M M

*Results of Micrometer Measures of Double Stars made with the 28-inch Refractor at the Royal Observatory, Greenwich, in the year 1900.*

(Communicated by the Astronomer Royal.)

The measures were made with a bifilar position-micrometer on the 28-inch refractor, aperture 28 inches, focal length 28 feet. The power generally used was 670, but when the definition permitted a power of 1120 was employed for observing very close pairs. A blue glass shade was employed to diminish the light and irradiation when bright stars were observed. The observations were made in variously coloured fields or in a dark field with illuminated wires. The initials in the last column are those of the observers, viz. :—

B. Mr. Bryant    L. Mr. Lewis    W.B. Mr. Bowyer

The observations of *Capella* have already appeared in the *Notices of the Society for 1900 June and December*, and hence are not included in the present paper.

*Micrometric Observations of Double Stars.*

Star's Name.	R.A. 1900. h m °	N.P.D. 1900. °	Position Angle °	Dis- tance. "	No. of Meas.	Mags.	Epoch 1900.	Obs.
Σ 3062	0 1 32.10	341.8	1.50	1	6.9	8.0	.066	B.
β 253	0 5 32.2	49.7	0.43	1	8.3	8.4	.066	B.
Krueger I	0 6 32.43	188.7	2.01	1	9.1	9.2	.066	B.
β 1026	0 7 36.56	330.9	0.37	1	8.1	8.9	.066	B.
Ω 2 A.B.	0 8 63.35	38.2	0.52	2	6.5	8.0	.033	B.
		37.3	0.49	1	...	...	.041	L.
Ω 4	0 10 54.4	100.6	0.23	2	7.4	8.1	.948	B.
β 1027	0 10 69.3	180.1	1.40	1	7.7	10.5	.041	L.
		184.1	1.44	1	...	...	.747	W.B.
β 1093	0 15 73.36	59.1	0.31	2	7.3	8.2	.493	B.
Ω 12(λ Cas- siopeiae)...	0 26 36.8	145.0	0.37	1	5.0	6.0	.066	B.
Ω 15	0 30 41.32	320.5	0.17	1	7.5	8.5	.964	B.
β 257	0 35 43.17	234.5	0.49	1	8.1	8.8	.964	B.
β 865	0 38 47.20	195.9	1.11	1	8.3	8.8	.964	B.
β 866	0 40 47.20	70.8	1.54	1	9.1	9.1	.964	B.
β 495	0 42 71.52	225.6	0.57	2	7.6	7.7	.033	B.
β 232	0 48 39.55	320.1	0.44	1	8.0	8.1	.964	B.